

HOW PRECAST BUILDS®

ABC Case Studies
 Visit project profiles on www.pcine.org, www.pci-ma.org and www.pci.org.

Update on PCINE Technical Committee Activity
PCI Resources

© COPYRIGHT MATERIALS
 This educational activity is protected by U.S. and International copyright laws. Reproduction, distribution, display and use of the educational activity without written permission of the presenter is prohibited.

1

PCI Northeast Bridge Technical Committee Update

PCI Northeast Bridge Technical Committee was established in 1990
 Covers the Following States CT, MA, RI, VT, ME, NH and NY

Mission: Update & develop regional bridge design resources.
 Membership: State DOT's, Producers, Consultants
 Meetings Held: Three/Year

<p>State DOT</p> <p>Bryan Reed – CTDOT Tim Fields - CTDOT Brian Myers - Maine DOT Brian Reeves – Maine DOT Alex Bardow – MassDOT Mike Merlis – MassDOT Edmund Newton – MassDOT (retired) Duane Carpenter – NYS DOT Ramiz Turan – NYS DOT Jason Tremblay – NH DOT David Scott - NH DOT Mike Savella - Rhode Island DOT (retired) Rob Young – Vermont AOT</p>	<p>Consultants</p> <p>Michael Oulmo - CHA Associates Eric Calderwood - Calderwood Eng. Ben Cota – GCP Technologies Darren Conboy - Jacobs Eng. Ed Barwick - Lin Associates John Byatt – GLD Fless O'Neil Paul Meyers – Gill Engineering</p> <p>Producers</p> <p>Joe Carrara - J. P. Carrara & Sons Bruce Miller – Unistress Corp. Chris Fowler - Oldcastle Precast Jared Stolar - Daley Precast Scott Herigan – Fort Miller Bill Augustus – United Precast Troy Jenkins - NPP</p>
--	---

First NEBT Girder 1995

2

PCI Northeast Bridge Resources
 Reports are available at www.pcine.org

Bridge Resources

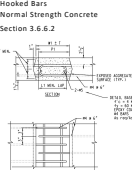
Current Updates

- > **NEXT Beam Guidelines Updated**
January 2021 (2nd Ed)
- > **PCI Northeast Full Depth Deck Panels Guidelines**
May 2020 (3rd Edition)
- > **Precast SIP Deck Panel Guidelines, 2nd Ed.**
February 2017
- > **Northeast Deck Bulb Tee Guidelines (NEDBT)**
March 2018
- > **Camber & Profile Management in Adjacent Beams**
January 2018
- > **Resolution of Non-Conformances in Precast Concrete Bridge Elements**
January 2018
- > **Current Work - Guidelines for Accelerated Bridge Construction using Precast/Prestressed Concrete Components**

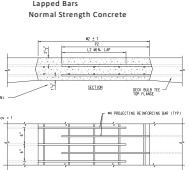
3

Closure Joints Design Options in the AASHTO ABC Specification

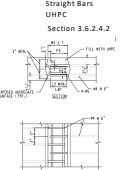
Hooked Bars
Normal Strength Concrete
Section 3.6.2.2




Lapped Bars
Normal Strength Concrete



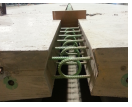
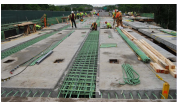

Straight Bars
UHPC
Section 3.6.2.4.2





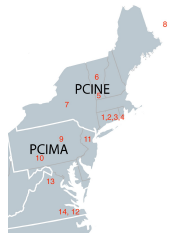
AASHTO ABC Guide Specifications 1st Edition 2017
Section 3.6.2 Closure Joints used in Deck Elements

- ✓ Full Depth Deck Panels
- ✓ Decked NEXT Beams
- ✓ Deck Bulb Tees
- ✓ Box Beams

7

NEXT Beam PCI Certified Producer Members



14 PCI Certified Producers can fabricate the NEXT Beam in the Northeast. Contact the regional association or a producer in your region for assistance.

PCINE Member



- 1 - Blakeslee Prestressed, Branford CT
- 2 - Oldcastle Precast, Avon CT
- 3 - United Concrete, Yalesville, CT
- 4 - Coreslab Structures, Thomaston, CT
- 5 - Dailey Precast, Shaftsbury VT
- 6 - J. P. Carrara & Sons, Middlebury VT
- 7 - L. C. Whitford Co., Wellsville NY
- 8 - Strescon Limited, St. John NB Canada
- 9 - Northeast Prestressed Products, Cressona PA

PCIMA Members

- 9 - Northeast Prestressed Products, Cressona PA
- 10 - PennStress, Roaring Spring PA
- 11 - Precast Systems, Inc., Allentown NJ
- 12 - Coastal Precast Systems, Chesapeake VA
- 13 - Rockingham Precast, Harrisonburg VA
- 14 - Atlantic Metrocast, Portsmouth VA

8

Route 73 Bridge 15 and 16, Rochester, VT

Owner:
Vermont Agency of Transportation
Project Scope:
Two bridges in 4-bridge \$6.4m project.

Structural Precast Elements:
Bridge 15 - 4 NEXT 28D 74'3" x 12'2"w
Bridge 16 - 3 NEXT 28D 72'1" x 11'3"w

- 13 approach slabs (7 for Bridge 15 and 6 for Bridge 16).
- 8 precast wingwalls (four apiece)
- 4 precast abutments (two apiece)

\$1000 p/h liquidated damages beyond bridge closure period.
Incentives for finishing early were met.
Bridge 15 - 84 hour max time reopened in 72 h
Bridge 16 - 60 hour max time reopened in 52 h

9

Precast Sub-Structures




Road-closure max time Bridge 15 – 84 hours
Incentives for finishing early were met Bridge 15 – 72 h hours



10


Bath Viaduct Replacement, Bath Maine



Owner:
MEDOT, Augusta, ME
Engineer of Record:
VHB Engineers, Portland, ME
Contractor:
Reed & Reed; Woolwich, ME

Project Scope:
20 spans - 1300 Ft
80 - NEXT D36 - 8000 psi
19 Precast Pier Caps
Flange of Beam: Poured to compensate for prestress camber to adjust for roadway profile

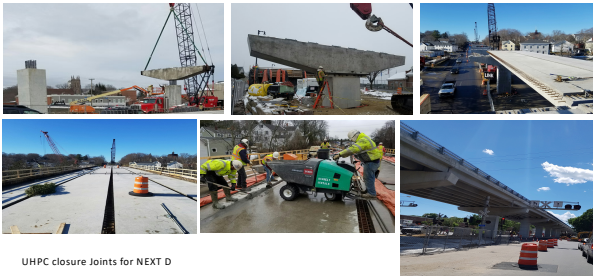
Time Frame:
October 2016: Closure of existing viaduct – 9 month
Scheduled Opening May 2017:
Opened 3-Weeks ahead of Schedule
\$14 million complete re-construction



11

Bath Viaduct Replacement, Bath Maine

Precast pier caps over CIP Shafts December 2016 - February 2017 - two girders shipped/day



UHPC closure Joints for NEXT D

12

Sandy Hill Bridge Middlebury, VT



Owner: VTrans, Montpelier, VT
Engineer: VHB Engineering
Contractor: T. Buck Construction
Precast Scope: 53 TOTAL COMPONENTS
Footings, Abutment walls, Wing walls, Arch segments, Approach Slabs, NEXT D Beam, Architectural Fascia Panels
30 Mile Detour - 45 days Closure.
Replicate the look of the original 1924 bridge to meet historical groups & town.



14



**Oil Mill Road Bridges, Waterford, CT
Lateral Slide**



Owner: CTDOT, Newington, CT
Owner's Project Manager: CME Associates, East Hartford, CT
EOR: AI Engineers, Middletown, CT
Contractor: Brunali Construction, Southington, CT
Heavy Lift Engineer: Barnhart Crane, Memphis, TN
Project Scope: 4 slides with one - 1/2 of each bridge installed within a 34-hour period.
Precast Elements: Eight (8) 10'-4" - 43' Long NEXT 28F (4 per one-span bridge).



15



Goethals Bridge NY



Project Scope: \$1.5 Billion Project
7109 ft long Bridge
397 Bulb-Tees - up to 178' long
6,816 SIP Deck Panels
624 full-depth deck panels
450 T-walls - retaining & abutment walls
Owner: Port Authority of NY & NY
Civil/Structural/MEP Engineer: Parsons Corp.
General Contractor: Kiewit-Wesley-Massman JV
Precaster: ~~W&L~~ Cressona, PA (Bulb tees & SIP panels)
Erect Miller Co., Schuylerville, NY (abutment & retaining walls)
Wesley-Massman, Pittsfield, MA (Full Depth deck panels)




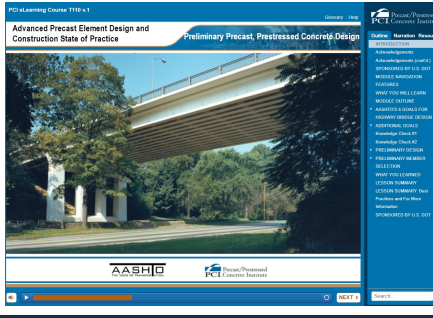
17



Take a Course!

- Approximately 60 minutes
- Self-paced
- Start – Stop feature
- Topics covered on right menu
- Tests along the way
- Final test at completion of the module to receive PDH credit

Download the PowerPoint notes 



30

Contact PCI Certified Plants - www.pci.org

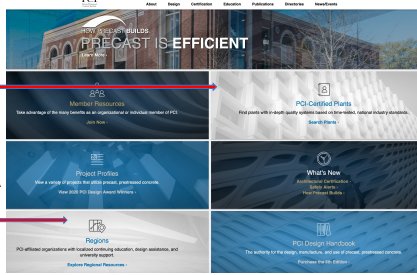
PCI Certified Plants offer

- Design Assistance
- Budget Development
- Schedule Planning
- Value Engineering

Also contact the PCI Regional Associations in your area for additional support and resources.


PCI Mid-Atlantic
NJ/PA/DE/MD/Washington DC/VA
www.pci-ma.org


PCI Northeast
ME/NH/VT/MA/RI/CT/NY
www.pci-ne.org



31

How Can We Help You?
Please take a brief survey after this session.

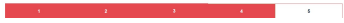




Thank you for joining the PCI Mid-Atlantic and PCI Northeast Chapters at our bridge design seminar. We hope the seminar, virtual plant tour, and panel discussion provided valuable information and insight into the bridge design process. To help us better understand your experience, please feel free to answer the survey questions below and leave any additional comments or questions you have. Our goal is to make these sessions as valuable as possible, so any and all feedback is appreciated!


1. HOW SATISFIED WERE YOU WITH THE SPEAKERS AND TOPICS OF EACH SESSION?

1 - NOT AT ALL SATISFIED 5 - EXTREMELY SATISFIED



32

Join Us for Our Next Session



Session 3

Tuesday, April 27, 2021
11:00 – 1:30 pm EDT | Credit – 2.5 PDH

- Welcome and Introduction – Dawn Decker
- PCI Body of Knowledge and Resources – Rita Seredien
- Lateral Stability – Reid Castrodale
- Girders Repairs and Fabrication Issues – JP Bhard
- UHPC for Bridge Elements – JP Bhard
- Update on NEXT Beam Guidelines – Mike Cuiro
- Producer Roundtable
- Wrap-up and Adjourn – Rita Seredien

33



THANK YOU




34